MAY, 1905.

ENTOMOLOGICAL NEWS

Vol. XVI. No. 5.

Cryptohalictoides spiniferus Viereck.

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PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.

Entered at the Philadelphia Post-Office as Second-Class Matter.

ENTOMOLOGICAL NEWS

Published monthly, **excepting July and August,** in charge of the Entomological Section of the Academy of Natural Sciences, Philadelphia, and the American Entomological Society.

ANNUAL SUBSCRIPTION, $1.00 IN ADVANCE.

Outside of the United States and Canada, $1.20.

Advertising Rates: 30 cents per square inch, single insertion; a liberal discount on longer insertions. No advertisement taken for less than 60 cents—Cash in advance.

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PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

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Two New Species of Aphodius.

BY H. C. FALL.

The two species of *Aphodius* described below have been taken in numbers by Dr. Blaisdell and Mr. Knaus respectively. They deserve to be more generally known, and as a preliminary step to their distribution the following diagnoses have been drawn up and their relationship to previously described forms indicated. I take pleasure in dedicating each to its discoverer.

Aphodius blaisdelli n. sp.

Oblong, black or dark castaneous, under side slightly paler, legs castaneous. Head not tuberculate, finely punctate with intermixed coarser punctures, not at all rugose; clypeus broadly emarginate, rounded each side; genæ prominent, subrectangular. Prothorax wide, only slightly narrowed toward the base, sides broadly arcuate, hind angles obtuse but rather well defined, basal margin bisinuate each side, marginal line deep and entire, disc sparsely punctate with coarse and fine punctures intermixed. Elytra oblong, scarcely narrowed at base, humeri slightly dentiform, striæ rather fine, closely rather finely punctate, intervals nearly flat on the disc, becoming strongly convex at apex; interstitial punctuation minute and sparse. Body beneath alutaceous and somewhat dull, feebly but numerously punctate, mesosternum densely

punctate, carinate between the coxæ. Hind femora finely alutaceous and sparsely punctate over the entire surface. Spur of anterior tibiæ stout and strongly arcuate apically in the male, more slender and nearly straight in the female; basal joint of hind tarsus slightly longer than the next three. Length 6-7¼ mm.

Described from a good series of specimens communicated by Dr. F. E. Blaisdell, who took them on November 24th from a wood rat's nest in the Alhambra Valley, Contra Costo County, California.

This is the species referred to by Dr. Blaisdell in the report of the proceedings of the fourteenth regular meeting of the Pacific Coast Ent. Soc. as *A cribratus*.* The entire catch of ninety-six specimens was taken "in a clump of earth at the bottom of the nest, wet with excrementitious fluids, and no larger than a double fist. The larvæ also were taken."

A careful comparison with the other members of Horn's "Group G," to which the present species belongs, shows that it is unquestionably distinct and differs from all of them more than they do from each other. By Horn's table it would fall with *cribratus* because of the simply emarginate clypeus, but it differs from this, and *nevadensis* and *gentilis* as well, by the smooth front, more quadrate prothorax with better defined hind angles and well marked exterior basal sinuation, the alutaceous and more strongly numerously punctate hind femora, and the longer basal joint of the hind tarsus, this being subequal in length to the three following in *gentilis* and *cribratus*, and distinctly shorter than the three following in *nevadensis*. In the dual pronotal punctuation *blaisdelli* agrees with *nevadensis*. It is not unlikely that the present species may be found mixed with *cribratus* in collections; if so, the above distinguishing characters will enable it to be readily separated.

Aphodius knausii n. sp.

Moderately elongate, slightly broader posteriorly, pale yellowish testaceous, shining, disc of thorax irregularly nebulously infuscate, elytra with a short fuscous stripe on the fifth interspace near the base, a common transverse spot just before the middle reaching to the third stria, and usually extending somewhat forward on the third interspace; markings frequently faint or nearly obsolete. Head without trace of tubercles,

* ENT. NEWS, March, 1905, p. 95.

smooth, shining, minutely very sparsely punctulate; clypeal emargination broad and shallow, sides rounded; genæ slightly prominent, obtuse. Prothorax not narrowed in front, sides strongly, evenly arcuate, fimbriate anteriorly; basal angles not defined, basal marginal line strong throughout, the median lobe moderately prominent; surface minutely alutaceous but strongly shining, punctuation rather sparse, intermixed. Elytra slightly wider than the prothorax, humeri not dentate, striæ rather deep, very faintly or scarcely visibly punctulate; intervals convex, each with a nearly regular series of very fine, feeble, distinct punctures. Beneath finely alutaceous and strongly shining, mesosternum not carinate, metasternum very sparsely punctate, ventral segments with a row of rather coarse setigerous punctures along the anterior margin of each, otherwise impunctate. Anterior tibiæ smooth in front, externally tridentate, the terminal tooth normal, the upper tooth small, margin above not crenulate; tibial spurs slender and nearly straight, not differing in the sexes. Length 3–3½ mm.

Taken abundantly at Englewood in Southwestern Kansas by Mr. Warren Knaus.

A rather pretty little species, allied to *phalerioides* and *larreæ*, but smaller than either and differing from both in the elytral markings, the minute or obsolete punctures of the elytral striæ, the partial fimbriation of the side margins of the prothorax, and the ventral punctuation. In both *phalerioides* and *larreæ* the side margins of the prothorax are fimbriate throughout and the ventral segments are irregularly punctate. In *larreæ* the base of the prothorax is broadly evenly arcuate with scarcely a trace of median lobe; there are also sexual differences in the clypeus which do not obtain in *knausii*.

Notes on the Life History of Anthocharis genutia Fab.*

By John A. Grossbeck.

Amongst the first of our New Jersey diurnals to appear in the spring from hibernating chrysalids is the little orange-tip butterfly, *Anthocharis genutia*. This species was considered a rarity—at least in northern New Jersey—and it is only in recent years that the collectors in this vicinity have added it to their collections. It is not at all uncommon on Garret Mountain, Paterson, but seems to be confined to a very limited area. This, however, is accounted for by the fact, that

* Read before the Newark Entomological Society.

the territory inhabited by the insect is especially suitable for the development of the food plant, which is a little Crucifer that grows in the sandy soil on the rocks.

The males are the first to appear, and single specimens may be seen in the latter part of April. They do not become abundant until the 6th or 7th of May, and then an occasional female (about 1 ♀ to every 10 ♂'s) may be seen among them. Between the 10th and 18th of May the females are almost as common—in one instance they were more common than the males; but shortly after the latter date, all disappear suddenly. The first appearance is liable to be retarded by a cold temperature and consequently the dates may be shifted backward a little.

Females were observed depositing eggs May 11th, and the first larvæ hatched on the day following. The egg is cylindrical, broadest at the middle, slightly narrow at the base, and tapering rather acutely at the apex. It is orange in color, and under the power of a ¼-inch objective shows about fifteen vertical ribs, with numerous faint cross ridges between.

The eggs are laid singly on the stem of the food plant *Arabis lyrata*, immediately below the terminal bud of the plant and large plants may have as many as four eggs. This is slightly different from a note published by Mr. Hornig (ENTOMOLOGICAL NEWS, Vol. XIV, p. 252), who says: "As a rule there is only one egg on a plant, although two have been collected on large healthy specimens." The food plant in this instance was *Sisymbrium thaliana*.

From the lot of eggs collected on May 11th, nothing was bred, for as soon as they hatched the young larvæ fell prey to a small black spider which spins its web on the plant. There were several such in the cage which were not noticed until the entire lot of larvæ had been destroyed.

On May 18th I saw an isolated female in the valley, below Garret Mountain, which had evidently wandered from its breeding grounds; it was flitting gently about, stopping at short intervals on a white blossom which was afterwards determined as spring cress (*Cardamine rhomboidea*). A close examination of the blossoms revealed on each an egg tucked beneath, close to the calyx.

On the 19th I made another trip to the Garret Mountain. Judging from the abundance of eggs one week previous, I expected to reap a harvest of the larvæ; but after a half day's hard work I was glad to have eleven specimens. The rarity of the larvæ was easily explained, for on almost every plant was one or more of the little black spiders.

The young larvæ feed on the small tender leaves, but when the seed pods appear, these seem to be preferred, the larva beginning to eat at the tip and moving backwards until it is entirely consumed. When at rest it usually lies on one of the linear leaves and is very well protected by the resemblance. The full grown larva measures about 20–24 mm. in length, is pale bluish green with white spiracles, and has a rather broad mid-dorsal stripe of a yellowish color and a white longitudinal stripe on each side. The body is scantily covered with short, black, bristle-like hairs.

The first larva pupated June 5th. The chrysalis is a very peculiar looking object with the anterior part greatly prolonged and drawn to a point, extending far above the silken girdle. Most of the pupæ were attached to the food plant, but a few were fastened to the sides of the breeding cage. On this same date (June 5th) I gathered on the mountain from the food plant a number of small creamy yellow cocoons of parasites, and on the following day I found two in my cage which seemed to associate the parasite with the *genutia* larva. A small Braconid (*Apanteles pergandei*) emerged June 8th and a number of others two days later. The determination was kindly made by Dr. Ashmead.*

Adult flies from the chrysalids issued in the early part of July; the late appearance was due to abnormal conditions, though all but one specimen out of a dozen pupæ produced perfect imagos.

In the fields the fly is usually distinguished from other *Pierids* by its small size, whiter color and low jerky flight. It seldom, if ever, alights and can be taken easily if approached

*The species is described only in MS. and will appear in Dr. Ashmead's "Monograph of the North American Braconidæ," now in preparation.

cautiously; but if disturbed will give the collector a long chase, always avoiding the net. It rarely rises above four feet from the ground and may be pursued till caught without its rising overhead and soaring away.

Butterflies of Mt. Wilson, Southern Calfornia.

By Fordyce Grinnell, Jr., Palo Alto, Calfornia.

Mt. Wilson is located in the front range of the San Gabriel Forest Reserve, Los Angeles County. It is about forty miles from the Pacific Ocean—on a clear day the ocean is plainly visible from the summit, and the view over the surrounding country and the Mojave Desert to the north, is magnificent. It is reached by two picturesque winding trails about nine miles in length. The elevation is about 5886 feet above sea level, and from the floor of the valley it rises about 3000 feet. The city of Pasadena is located at its base.

It is probable that more insects have been collected on Mt. Wilson than any other mountain in California. At Heninger's Flats, quarter way up the mountain, is the largest forestry station in Southern California. On the summit is being constructed one of the largest astronomical observatories in the world. Two delightful camps are here, one on the summit, and the other a little below the top. In 1890 the Harvard telescope was here, which was later moved to South America.

The vegetation is varied and interesting and of late has been quite thoroughly investigated, many new things having been discovered. This richness of vegetable life is in harmony with the profusion of insects. The whole mountain is covered with an almost impenetrable chaparral, which together with the rugged character of the mountain, makes collecting rather difficult. There are three zones of plant life easily traceable on the mountain, with interminglings. First, the Chaparral Belt, characterized by the abundance of chamisal or *Adenostoma fasciculatum*; second, the Big-cone Spruce Belt, characterized by the conspicuous tree, *Pseudotsuga macrocarpa*, *Arctostaphylos*, *Quercus wislezenii*, and scrub *Quercus chrysolepis*; third, the Pine Belt, characterized by *Pinus lambertiana*, *P. monticola*, *Liboce-*

drus decurrens, *Quercus chrysolepis*, and *Conothus divaricatus*. The zones represented are the Lower and Upper Transition.

The butterflies listed below have been mainly the results of the writer's many collecting trips to the summit, for several years past, in May, June, July and August. The list is surely not complete, but will serve as an incentive for more and better work in the future. Earlier collecting would quite surely add species.

The scenery is so grand and inspiring, the air so clear and bracing, nature so joyous and absorbing, that as each summer vacation approaches, an irresistable impulse is felt for another quiet, lone intercourse with this grand old monarch of time.

1. *Danais plexippus* Linn.—A few found on the summit several years ago, around the *Asclepias* blossoms.

2. *Danais berenice* Cram.—Rare. Only occasionally seen.

3. *Argynnis* sp., probably *semiramis*, noted on the summit several years ago.

4. *Melitæa chalcedon* Db. & Hew.—Very common. Larvæ found on *Mimulus*.

5. *Melitæa gabbii* Behr.—Not common in June.

6. *Melitæa wrightii* Edw.—Two specimens taken during the last two summers.

7. *Phyciodes mylitta* Edw.—Frequent in Santa Anita canon.

8. *Grapta satyrus* Edw. Occasional.

9. *Vanessa antiopa* Linn.—Only occasionally seen.

10. *Pyrameis caryæ* Hbn.—Common on all the mountains.

11. *Pyrameis cardui* Linn.—Common everywhere.

12. *Junonia cœnia* Hbn.—Common and very pugnacious.

13. *Limenitis lorquini* Boisd.—Common especially in the canons.

14. *Heterochroa californica* Butl.—Common around the *Quercus chrysolepis*, to the summit.

15. *Cœnonympha californica* Db. & Hew.—Common and very variable.

16. *Cœnonympha ochracea* Edw.—Not rare; especially in June–August. Recorded under the name of *brenda*.

17. *Satyrus silvestris* Edw.—Common in the chaparral belt. Variable and probably more than one species.

18. *Lemonias virgulti* Behr.—Common in the chaparral belt, especially around *Eriogonum fasciculatum*, on which it no doubt feeds.

19. *Thecla grunus* Boisd.—Common around *Quercus chrysolepis*, upon which the larvæ and pupæ occur.

20. *Thecla californica* Edw.—Common in the upper part of the chaparral and pine belt.

21. *Thecla dryope* Edw.—Common around patches of manzanita in the pine belt.

22. *Thecla spadix* Hy. Edw.—Exceedingly local and confined to the lower part of the Big Cone Spruce Belt in all the mountains.

23. *Thecla sæpium* Boisd.—Common in all the mountains in June.

24. *Thecla adenostomatis* Hy. Edw.—Common in the chaparral belt.

25. *Thecla iroides* Boisd.—Occasionally seen but more common in the valley.

26. *Thecla dumetorum* Boisd.—Occasionally taken in Santa Anita canon.

27. *Chrysophanus arota* Boisd.—Common in early July around the scrub oaks locally in the chaparral belt.

28. *Chryosphanus gorgon* Boisd.—Not common.

29. *Lycæna icarioides* Boisd.—Common on the summit around *Lupinus* sp.; this will probably have to be separated under another name, with further study.

30. *Lycæna polyphemus* Boisd.—Common in May. This group is poorly understood and needs much study. More species will probably be added.

31. *Lycæna sonorensis* Felder.—A few taken in May in the Santa Anita canon.

32. *Lycæna battoides* Behr.—Not common.

33. *Lycæna pseud. piasus* Boisd.—Common everywhere.

34. *Lycæna exilis* Boisd.—Common in July.

35. *Lycæna marina* Reak.—Not rare in June.

36. *Lycæna acmon* Db. & Hew.—Common everwhere. Probably more than one species under this name.

37. *Pieris protodice* Bd. & Lec.—Common, also the variety *vernalis*.

38. *Pieris rapæ* Linn.—Common.

39. *Nathalis iole* Boisd.—Taken in numbers several years ago, near Heninger's Flats.

40.—*Anthocharis sara* Boisd.—Common.

41. *Anthocharis ausonides* Boisd.—Occasional.

42. *Colias eurydice* Boisd., and var. *amorphæ* on Heninger's Flats.

43. *Colias cæsonia* Stoll.—Two ♀ specimens taken. These show a curious aberration; the black marginal band is broken into a series of yellow spots. On the secondaries, black scales are distributed along the outer margin.

44. *Colias eurytheme* Boisd.—Common.

45. *Colias harfordii* H. Edw.—Common in July in the canons.

46. *Papilio rutulus* Boisd.—Occasionally soars up the mountain sides from the canons below.

47. *Papilio eurymedon* Boisd.—With the last.

48. *Papilio indra* Reak.—A few specimens taken. Rare and difficult to catch.

49. *Pamphila nemorum* Boisd.—Common in May and June.

50. *Pamphila agricola* Boisd.—Not common.

51. *Pamphila campestris* Boisd.—Common.

52. *Pamphila phylæus* Dru.—Common.

53. *Pamphila melane* Edw.—Very common in June.

54. *Pyrgus ericetorum* Boisd.—3 males and 5 females taken occasionally in the upper portions of the chaparral belt.

55. *Pyrgus tessellata* Scud.—Common.

56. *Nisoniades propertius* Lint.—Common.

57. *Nisoniades callidus* Grinnell.—Very local and rare on the summit, altitude 5886 feet.

58. *Nisoniades tristis* Boisd.—Not common.

In a country which is undergoing such a change as this, in the way of material progress, the natural features of the land are becoming slowly eradicated, and so thoroughly reliable local lists will be extremely valuable to the future students.

Prof. W. L. Tower, of the University of Chicago, sailed from New York, on April 8th, for Mexico, where he will spend a year's leave of absence in entomological investigations.

A New Milesia from Arizona with Notes on Some Wyoming Syrphidae.

By Roy L. Moodie, The University of Kansas, Lawrence.

The Wyoming Syrphidæ were collected from June to September of the past summer in the central portion of Fremont County, Wyoming, near the town of Lander, which is situated near the eastern base of the Wind River Mountains. The altitudes varied from five thousand to eight thousand feet. The character of the country is that of most of the Western States, dry and but sparsely settled. Very little vegetation grew except along the banks of the streams. Since few, if any, Diptera have been reported from this region I venture to offer these notes on the Syrphidæ as a contribution to the geographical distribution of the group.

To Doctor F. H. Snow, of the University of Kansas, my warmest thanks are due for permission to study and describe the new *Milesia*. Dr. Charles F. Adams has assisted me greatly by his kind advice and interest in my studies. He has confirmed most of my identifications.

Milesia mida sp. nov.

Male.—Length 16-18 mm.—Face light yellow, thickly covered with similar pollen and pile, concave below the antennæ. Just above the base of the antennæ there is a small triangular spot. The antennæ and aristæ are entirely reddish brown, in profile situated in the middle of the head. Cheeks narrow with a black spot near the orbit. Frontal triangle same as the face. Vertical triangle black, yellow before the ocelli. Eyes bare, in the male contiguous for a short distance. Occiput black, posterior orbits broadly yellowish pollinose. Thorax black, opaque, with light yellow markings, as follows: A pair of median stripes gently convergent posteriorly and extending but little beyond the middle of the thorax; humeral callus oval, slightly elevated, yellow, one millimeter in width, seperated from the adjacent median stripe by a narrow black line; near the posterior end the median bands are joined by a yellow cross-band which is interrupted between the median bands and extends laterally to the base of the wings; posterior margin of the thorax covered by an entire yellow band; postalar callus yellow. Scutellum black with its posterior margin yellow. Pleura on the anterior border from the humeri to the base of the coxæ, black. Meso-pleura with a vertical, sterno-pleura with an oval nearly contiguous, spot. Tegulæ and halteres yellow. Abdomen: First segment black; second segment black with a yellow

cross-band which begins broadly on the anterior lateral edge of the segment and ends near the middle, where it is broadly interrupted by the black of the segment, the two halves of the band slightly arcuate. On the posterior angles of the segment are two oval reddish yellow spots; third segment black with a bright yellow cross-band, which is sometimes sub-interrupted by a narrow black line. Posterior edge of the segment crossed by a reddish yellow band; fourth segment same as the third, except that the posterior reddish yellow band forms the greater part of the segment, is dilated in front in the middle and is covered with reddish yellow pile. Venter: Anteriorly of alternate bands of black and yellow, posteriorly black. Legs: first two pairs of coxæ and all of the trochanters black, with black pile; third coxæ yellow with yellow pile; femora reddish yellow and black, the black with a slight greenish reflection; middle tibiæ and tarsi and hind tibiæ and tarsi wholly light yellow; front tibiæ and tarsi black, the tibiæ reddish yellow at the base; pulvilli yellow; ungues yellow with black tips.

Hab.—Arizona.

In structure this species is very similar to *Milesia ornata* Macq, but may be readily distinguished by its smaller size, darker color and the very different arrangement of the bands on the thorax and abdomen and also by the black anterior tibiæ and tarsi which in *M. ornata* are reddish yellow. *Milesia pulchra* Will. from Guatemala is also very similar in structure to *M. ornata*, and it is thus evident that the genus *Milesia*, as now known, forms a very homogeneous group.

Five specimens of the species *M. mida* were collected by Dr. F. H. Snow during his expedition to Oak Creek Canon, about twenty miles south of Flagstaff, Arizona. Altitude 6,000 feet. These specimens now form a part of the Entomological collections belonging to the University of Kansas.

The following table will be of use in more readily separating the species ot the genus *Milesia*:

1. Anterior tarsi black, posterior ones yellow . . . . . **mida** sp. nov.
   Anterior and posterior tarsi, either yellow or black . . . . . 2.
2. Anterior and posterior tarsi yellow . . . . . **ornata.** Macquart.
   Anterior and posterior tarsi black . . . . . **pulchra.** Williston.

The most abundant of the Diptera in Wyoming last summer were the Asilidæ, Bombyliidæ and Tachinidæ. The rarest were the Syrphidæ and the Conopidæ. Only twenty-five specimens of the latter family were taken all summer, and not until the latter part of August were many Syrphidæ observed.

Arctophila flagrans O. S.

Four specimens, three males and one female, of this beautiful insect were taken at a spring in the mountains. The specimens were all taken one noon and no more were seen during the rest of our stay there. The spring is situated high up above the canon of the Big Popo Agie River at an altitude of 7,200 feet and issues from the side of Prospect Peak. The insects captured were shy and difficult to take. This species has been reported from Colorado, New Mexico and British Columbia (Osburn).

Baccha lemur O. S.

One specimen taken in August on flowers of the *Cleome integrifolia* with other small Diptera and Hymenoptera. Osten Sacken records this species from California, Nevada, Fort Bridger, Wyoming and N. Mex. (Western Diptera, p. 334).

Catabomba pyrastri.

Two specimens of this species were taken hovering in the air under juniper trees, at an altitude of 6,000 feet, during July, near Lander.

Eristalis brousi Will.

Two male and four female specimens agree very well with the descriptions and with specimens in the Kansas University collection. In one of the males the mid-dorsal band of the abdomen occupies rather less than a third of the second segment, while in the other male specimen the band occupies more than a third. In the latter specimen the sides of the band are not straight but rather strongly curved. All of the females lack entirely the opaque spots on the third and fourth segments. The female specimens differ also considerably in size from specimens collected in Colorado. The Wyoming specimens measure 14 mm. and the Colorado ones less than 11 mm.

Eristalis hirtus Loew.

Five males and four females of this species show scarcely any variation except in one case, that of a rather diminutive female, which lacks entirely the yellow of the second segment. This species is very closely related to *E. latifrons*, but may readily be distinguished by the plumose arista in *E. hirtus* and the bare arista in *E. latifrons*.

Eristalis latifrons. Loew.

Several specimens of this species were taken during July and August. I can discern no variation between the Wyoming specimens and ones taken near Lawrence, Kansas.

Eristalis montanus Will.

One male specimen captured on Beaver Creek, in September, agrees both with the description and with the type specimen; also a single male from eastern Wyoming. Osburn reports this species from British Columbia.

Eristalis flavipes Walker.

One male specimen of this species taken on Beaver Creek, in September, differs but little from the description given by Williston in his Synopsis, p. 168. The thorax is crossed by a broad black band and the first four segments of the abdomen are covered with pile of a reddish hue. The tibiæ are more red than brown. Two specimens in the Kansas University collection show marked variation from the Wyoming specimen and from each other. In both of these specimens the black stripe is entirely wanting on the thorax and the abdomen in neither specimen shows a reddish tinge. In one specimen, locality not given, the abdomen is wholly covered with dense yellow pile. The other specimen shows a remarkable variation. In general appearance it resembles to a great degree *Mallota cimbiciformis* Fall, but in structure it is essentially an *Eristalis*. The abdomen is entirely black with black pile, except that the first segment has a small amount of yellow pile.

Hab.—Wyoming, Wisconsin, and Williston gives Canada. New England, Washington Territory and Minnesota (Loew).

Eupeodes volucris O. S.

Two males and five females differ only in size from specimens taken in Colorado and Arizona. One male measures only 6 mm.

Helophilus latifrons Loew.

This species was not noted until the latter part of August, when numerous specimens of both male and female were taken feeding on flowers of *Artemesia* and *Solidago*. The Wyoming specimens uniformily have the median dorsal stripe of the

abdomen wider, otherwise there is little variation from specimens taken near Lawrence.

Helophilus similis Macq.

This species is represented by numerous specimens of both sexes. They were taken in company with the closely allied form *H. latifrons*.

Helophilus obscurus Loew.

A single specimen of this species agrees with the description, save that there is no brown ring on the hind tibiæ, the abdomen is more shining and some of the cross-bands are not interrupted.

Paragus bicolor Fabr.

But one specimen of this little Syrphid was taken this summer. The specimen, a male, is smaller than the Kansas specimens and the abdomen shows more black. Length 4 mm.

Syrphus arcuatus Fall.

One female specimen is lighter in color and smaller than a specimen from Arizona. The occiput is rather more pilose, the hind femora more extensively black, and the yellow spots on the fourth segment are only slightly arcuate.

Syrphus ruficaudus Snow.

One female specimen measuring 10 mm., taken at the base of Prospect Peak at an altitude of 7,200 feet, agrees very well with Snow's description (K. U. Quart. '92). The abdominal band on the third segment is scarcely at all subinterrupted and there is a more noticeable reddish cast to this segment than obtains in the type specimens. The legs in my specimen are entirely reddish yellow and show no signs of black. Taken in August.

Syrphus montivagus Snow.

One female specimen measuring 10 mm. agrees with the description and with the type specimens. Some of the types show more red on the fourth segment than my specimen has. The cross-band is entirely interrupted in the Wyoming specimen and the spots are more arcuated than is the case with any of the type specimens. Among the types I find a

few in which the cross-bands are entire. The facial tubercle is a little darker in the specimen from Wyoming, and the legs are entirely yellow, with the exception of the tarsi, which are reddish. So far as I am aware the female of this species has never before been reported. All of the type specimens are males. Taken in August on Baldwin Creek.

Syritta pipiens Linné.

This was the commonest of the Syrphidæ, found everywhere up to an elevation of 7,500 feet. Collected from June to September.

Fleas and Disease.

By C. F. Baker.

Estacion Agronomica, Santiago de las Vegas, Cuba.

No less epoch-marking than the announcements first made of the connection of mosquitoes with malaria and yellow fever is the news which now comes through Dr. Ashmead, the leprosy expert of New York, that Dr. Carrasquillo, of Bogota, has found the bacillus of Hansen in the intestinal canal of fleas. The rapid progress of leprosy after introduction into some of our flea-invested southern cities, from local endemicity to alarming epidemicity, is, according to Dr. Ashmead, probably to be credited to inoculation by flea bites.

In connection with the investigation of the relation of fleas to bubonic plague, it has already been shown by the writer (Proc. U. S. National Museum, Vol. XXVII, 1904), that the fleas of rats in the warmer regions of the earth are close relatives of the flea specific to human beings, and thus, far more likely to bite human beings than are the fleas of rats in the colder regions, which are only distantly related to *Pulex irritans*. It is now necessary to know if any of these southern rat fleas—of which there are a number of species—voluntarily bite human beings.

These investigations, and now the new lines brought into striking prominence by Dr. Ashmead's announcement, make it of first importance that a complete study be made of all the

species of fleas occurring on rats, mice, dogs, cats, and human beings throughout the United States and tropical America, since any well founded medical and bacteriological investigations of the subject must be based on a thorough scientific knowledge of the fleas themselves, just as in the case of the mosquitoes in their relation to yellow fever. The utmost gravity of the possibilities involved not only justify but render imperative a careful and complete survey. The writer has in progress such a work, in continuation of extensive papers on the fleas already published. Residence in the tropics and in a leprosy center, together with the hearty co-operation of Dr. Howard, of Washington, Dr. Lutz, of Sao Paulo, Brazil, Dr. Carter, of the University of Texas at Galveston, and others, has made possible a good beginning. It is hard to see how anything like a complete survey could be made without also the active co-operation of college and medical men in every part of these regions, the Hawaiian Islands, and the tropical regions of the Far East. The simplicity of the apparatus needed (tweezers, small homœopathic vials of alcohol, and several rat traps) and the ease with which material can be gathered from rats, dogs, cats, and human beings, should make possible the ready co-operation of all biologists and medical men, and a hearty invitation is herewith extended to all such and to any other persons interested. As large series as possible of specimens should be taken and full data as to locality, host, etc., should be inserted in every vial. A direct report will be immediately returned for all specimens sent either to the writer or to Dr. Howard, Government Entomologist in Washington, D. C., U. S. A., and full published credit will later be given for every sending.

It will greatly facilitate the rapid progress of the work if entomological, zoological, medical, and pharmaceutical journals the world over will kindly copy this notice.

LAST SPRING I found enclosed in a *cecropia* cocoon between the outer and the inner cover a small moth (?) with the deposit of eggs and the empty cocoon of same. The cocoon of *cecropia* showed two small holes on its side, apparently made from the outside. The larva of *cecropia* never pupated.—WILLIAM WILD, Buffalo, N. Y. (May have been *Varina ornata*) Eds.

Parasitic Hymenoptera of Algonquin, Illinois.—I.

By Wm. A. Nason, M. D.

The subjoined list of the Ichneumonidæ is the first of a series, in which I record as far as is now possible, my captures of the Parasitic Hymenoptera of Algonquin, Illinois. It has proved a very prolific collecting ground for these insect forms as my lists will show.

A short account of the locality will be of value in elucidating the character of this collecting field for exploration. In my notes on a collection, made here, of Micro-Lepidoptera, recently published in the Entomological News,* I stated that the locality has some peculiar faunal relations. But it has local features equally interesting and important biologically. The village is situated in a triangular valley where a small stream enters the Fox River. It is a valley of erosion, bordered by high bluffs which come close to the river banks except in the triangular delta mentioned above. The bluffs are about one hundred and thirty feet above the level of the Fox River, and in many places are wooded with black, red, white and burr oaks, with an occasional bass-wood and maple trees interspersed with hickory and black walnut. Back of the bluffs the country is a typical rolling Illinois prairie.

Algonquin is in the centre of the northern Illinois dairy region, and for this reason the original prairie vegetation and the undergrowth of the woods have been largely destroyed by the numerous herds of grazing cows which exist in this neighborhood. This fact is a prime factor in making this insect fauna peculiar. The food-plants of the species having been largely destroyed by causes stated above, the surviving insects are necessarily those which can adapt themselves to the existing vegetation and physical conditions. And this makes the present lists especially valuable, as during the next ten or twenty years there must result a great modification of the surviving forms of the present fauna and also result in the creation of new forms and a possible new fauna more adapted to the future modified conditions.

* For January, 1905, page 1.

Quite a percentage of the species enumerated were captured in the sweeping net. This method of collection has yielded rich results in low lands, among growths of bushes, edging woods, among clumps of annual and perennial plants in fence corners, and among the varied growths of vegetation along roadside fences and hedges.

Another most prolific field for collection has been the inside of the windows of houses, stores, barns, woodsheds and blacksmith shops of the village. Here I have found many of the same species as in adjoining places where I have used the sweeping net. But I have also found many rare and unique forms which the net did not secure and which were evidently cases where the insects, wandering in pursuit of their natural hosts, were entrapped by the windows.

One of the best collecting places I found to be the leaves and shoots of the box elder (*Negundo aceroides*,) of which there were six trees in my yard. Here, throughout the season of warmth, from March to October, I never failed to find a large series of parisitic Hymenoptera and small Diptera, besides various other insect forms. This species of tree is evidently one which served as an acceptable substitute to a very great variety of insect forms which had lost their original natural food plant.

My records show that the time of occurrence of this class of insects varies immensely. Some species were found almost constantly through the whole season, and were quite broadly distributed, while others occurred only in isolated locations and then only at special limited times. For instance, I found *Arenetra canadensis* Cress., in flight only on two days during my whole course of collection. This was on March 3rd and March 10th—in early spring, when the air was very mild, and yet snow remained a few feet from where the insects were in flight. Another species, *Glypta rufopleuralis* Walsh, I found on April 27 and 28, 1896, on a few twigs of *Negundo aceroides* in my yard. They were in abundance on these dates on this one spot on this single tree, but were not to be found on any of the trees of same kind growing near although carefully searched for. The only other specimens found were three on

windows of my house which were undoubtedly stragglers from the lot just described.

In fact, the collector of the parasitic and smaller Hymenoptera can find an extensive collecting ground almost anywhere. Wherever there is vegetation there are insects and their insect enemies, and abundant material can ever be found to interest and keep busy the active entomologist and student.

The identifications in this list of Ichneumonidæ were made by Prof. Geo. C. Davis, formerly of Michigan Agricultural College and author of a Review of the Ichneumonid Subfamily Tryphoninæ.

ICHNEUMONIDÆ.

ICHNEUMON L.

I. maurus Cress.
Oct. 1, 1893.
4 specimens.

I. viola Cress.
July 23, 1895.
Aug. 8, 1896.
4 specimens.

I. cincticornis Cress.
2 specimens.

I. navus Say.
May 15, 1894.
June 15–17, 1896.
3 specimens.

I malacus Say.
Oct. 2, 1895.
July 6, 1896.
2 specimens.

I. flavicornis Cress.
2 specimens.

I. galenus Cress.
1 specimen.

I. cæruleus Cress.
May 26, 1896.
4 specimens.

I. peplicus Cress.
1 specimen.

I. subcyaneus Cress.
Aug. 6, 1896.
3 specimens.

I. azotus Cress.
Sept. 17, 1895.
1 specimen.

I. brevicinctor Say.
July 17, 26, 29, 1895.
10 specimens.

I. extrematatis Cress.
2 specimens.

I. sagus Cress.
1 specimen.

I. jejunus Cress.
2 specimens.

I. sublatus Cress.
July 24, 1895.
1 specimen.

I. sublatus, var. *proximus*.
14 specimens.

I. unifasciatorius Say.
June 2, 23, 26, 1896.
July 4, 1894.
Sept. 12, 1893.
26 specimens.

I. bronteus. Cress.
1 specimen.

I. helvipes Cress.
June 14, 1894.
June 5, 1895.
7 specimens.

I. consignatus Cress.
1 specimen.

I. vittifrons Cress.
July 21, 1896.
Aug. 22. 1896.
2 specimens.
I. wilsoni Cress.
1 specimen.
I. comes Cress.
Sept. 15, 1895.
Oct. 16, 1895.
10 specimens.
I. lætus Brulle.
July 3, 1894.
July 7, 10, 1895.
Sept. 22, 1895.
Aug. 6, 13, 22, 1896.
14 specimens.
I. lætus, var. red.
1 specimen.
I. lætus, var.
2 specimens.
I. mimicus Cress.
1 specimen.
I. flavizonatus Cress.
2 specimens.
I. parvus Cress.
1 specimen.
I. parvus var.
June 28, 1894.
1 specimen.
I. vescus Prov.
1 specimen.
I. jucundus Brullé.
July 16, 1893.
June 4, 1896.
4 specimens.
I succinctus Brullé.
June 4, 1896.
2 specimens.
I canadensis Cress.
1 specimen.
I. paratus Say.
June 13, July 24, 1895.
7 specimens.
I. vulviventris Brullé.
June 3, 13, 14, 1895.
3 specimens.
I. vicinus Cress.
2 specimens.
I. seminiger Cress.
June 21, 27, 1895.
Aug. 13, 1896.
4 specimens.
I. vivax Cress.
Sept. 17, 1895.
1 specimen.
I. longulus Cress.
Aug. 9, 13, 1896.
2 specimens.
I. funestus Cress.
June 4, 1896.
3 specimens.
I. w-album Cress.
May 25, 1894.
2 specimens.
I. duplicatus Say.
June 8, 1895.
4 specimens.
I. scitulus, Cress.
3 specimens.
I. scitulus, var.
1 specimen.
I. rubicundus Cress.
Sept. 11, 1894.
4 specimen.
I. soror Cress.
1 specimen.

HOPLISMENUS Grov.

H. morulus Say.
June 19, 1894.
2 specimens.

TROGUS Grov.

T. obsidianator Brullé.
1 specimen.

EURYLABUS Wesm.

E. varufus Davis.
1 specimen.
E. separatus Davis.
1 specimen.

AMBLYTELES Wesm.

A. anceps Cress.
June 10, 1894.
Sept. 17, 1895.
2 specimens.
A. hiulcus Cress.
5 specimens.
A. ornatus Cress.
Aug. 1, 1895.
1 specimen.
A. suturalis Say.
Nov. 6, 1895.
2 specimens.
A. tetricus Prov.
1 specimen.

PHÆOGENES Wesm.

P. ater Cress.
June 26, 1894.
Aug. 31, 1894.
Aug. 12, 1895.
7 specimens.
P. discus Cress.
July 4, 1894.
July 31, 1895.
3 specimens.
P. fungor Norton.
June 28, 1894.
June 10, 1896.
Aug. 1, 1895.
3 specimens.
P. ? *hemiteloides* Ash. (Davis.)
June 13, 23, 1896.
July 17, 1896.
3 specimens.
P. ? *missouriensis* Ash. (Davis.)
July 1, 1896.
1 specimen.
P. n. sp. (Davis.)
1 specimen.
P. n. sp. (Davis.)
1 specimen.

CENTETERUS Wesm.

C. tuberculifrons Prov.
1 specimen.
C. n. sp. (Davis.)
July 25, 1895.
1 specimen.

COLPOGNATHUS Wesm.

C. helous.
April 14, 1896.
2 specimens.

HERPESTOMUS Wesm.

H. alternatus (Davis.)
Aug. 8. 1895.
1 specimen.
H. marginatus (Davis.)
Oct. 16, 1895.
1 specimen.
H. n. sp. (Davis.)
Sept. 27, 1895.
1 specimen.
H. n. sp. (Davis.)
July 26, 1895.
1 specimen.
H. orbus Prov.
Aug. 30, 1894.
1 specimen.

EXOLYTUS Forst.

E. aciculatus Davis.
5 specimens.
E. cultus Davis.
2 specimens.

STILPNUS Grav.

S. americanus Cress.
June 2, 15, 1895.
Aug. 27, 1895.
Sept. 8, 15, 22, 27, 1895.
June 8, 1894.
July 7, 1894.
May 21, 1896.
June 4. 1896.
15 specimens.

PHYGADEUON Grov.

P. caudatus Prov.
Sept. 10, 1895.
1 specimen.

P. impressus Prov.
1 specimen.
P. inflatus Prov.
1 specimen.
P. ? *lucens* Prov.
1 specimen.
P. marginatus Prov.
Sept. 4, 1894,
2 specimens.
P. nitidulus Prov.
July 25, 1895.
1 specimen.
P. parallelus Prov.
2 specimens.
P. rotundiceps Prov.
June 24, 1895,
1 specimen.
P. subfuscus Cress.
Aug. 8. 1895.
Oct. 16, 1895.
May 18, 29, 1895.
July 28, 1896.
5 specimens.
P. subspinosus Prov.
1 specimen.
P. vulgaris Cress.
May 24, Aug. 7, 1895.
2 specimens.
P. n. sp. (Davis.)
1 specimen.
P. n. sp. (Davis.)
1 specimen.

CRYPTUS Fabr

C. alacris Cress.
May 20, 1896.
1 specimen.
C. albicollaris Cress.
June 23, 1896.
2 specimens.
C. albitarsis Cress.
1 specimen.
C. americanus Cress.
May 8, June 2, July 3, 1894.
June, July, Aug., Sept., 1895.
22 specimens.
C. apicatus Prov.
Sept. 21, 1894.
1 specimen.
C. brevicauda Ashm.
June 7. 8, 1895.
3 specimens.
C. canadensis Prov.
May 22, 1895.
2 specimens.
C. ? *elongatus* Prov.
June 23, 1899.
1 specimen.
C. incertus Cress.
May 25, 1895.
1 specimen.
C. limatus Cress.
June 18, 1896.
1 specimen.
C. luctuosus Cress.
Aug. 26, 1894.
1 specimen.
C. montivagus Prov.
2 specimens.
C. mundus Prov.
July 8, 1894.
1 specimen.
C. nigricornus Prov.
3 specimens.
C. notatus Prov.
2 specimens.
C. nuncius Say.
2 specimens.
C. ? *perditus* Prov.
June 23, 1894.
Sept. 15, 1894.
Oct. 18, 1894.
3 specimens.
C. persimilis Cress.
Aug. 8, 1894.
May, June, July, Aug., 1894.
June, July, Aug., 1896.
26 specimens.
C. similis Cress.
June 15, 1895.
3 specimens.

C. soror Cress.
1 specimen.
C. vinctus Say.
June 4, 1896.
July 8, 17, 1896.
3 specimens.
C. n. sp. (Davis.)
2 specimens.
C. n. sp. (Davis.)
July 18, 1895.
1 specimen.

MESOSTENUS Grav.

M. gracilis Cress.
June 12, 14, 26, 1894.
July 4, 9, 1894.
Sept. 24, 1895.
7 specimens.
M. thoracicus Cress.
June 13, 1895.
July 26, 1895.
Oct. 5, 1896.
6 specimens.

HEMITELES Grav.

H. aletiæ Riley,
2 specimens.
H. crassus Prov.
Sept. 5, 1895.
1 specimen.
H. humeralis Prov.
May 29, June 9, 1894.
May 7, July 12, 1895.
May 20, June 20, 1896.
54 specimens.
H. syrphicola Ashm.
Aug. 1, 1895.
1 specimen.
H. pallipennis Prov.
July 10, 1895.
1 specimen.
H. n. sp. (Davis.)
1 specimen.
H. n. sp. (Davis.)
1 specimen.
H. utilis Norton.
Aug. 12, 1895.
1 specimen.

ORTHOPELMA.

O. bedelliæ Ashm.
Sept. 19, 1895.
1 specimen.

OPHION Fabr.

O. bifoveolatum Brullé,
2 specimens.
O. bilineatum Say.
May 8, 28, 1895.
April 18, May 12, 1896.
17 specimens.
O. purgatum Say.
July 26, Aug. 1, 1895.
June 15, July 17, 1896.
7 specimens.

EXOCHILIUM Wesm.

E. mundum Say.
June 19, 1894.
9 specimens.

ANOMALON Grav.

A. curtum Norton.
1 specimen.
A. ferrugineum Norton.
April 21, 1894.
June 8, 1894.
3 specimens.
A. nigrorufum Norton.
6 specimens.
A. ? *semirufum* Norton.
May 23, 1895.
1 specimen.
A. rufulum Prov.
2 specimens.

OPHELTES Holmgr.

O. glaucopterus Linn.
July 8, 1894.
1 specimen.

PANISCUS Grav.

P. geminatus Say.
May 8, 1894.
June 3, Sept. 12. 1895.
19 specimens.

CAMPOPLEX Grav.

C. alius Norton.
2 specimens.
C. argenteus Norton.
June 16, 1896.
2 specimens.
C. expertus Cress.
July 7, 1896.
3 specimens.
C. scalarius Prov.
June 26, 1894.
June 4, 1895.
3 specimens.
C. vicinus Prov.
3 specimens.
C. vitticollis Norton.
June 8, 1895.
1 specimen.

LIMNERIA Holmgr.

L. argentea Prov.
June 10, 1896.
1 specimen.
L. argentifrons Cress.
May 15, Oct. 20, 1894.
May 30, Sept. 3, 1895.
May 21, July 21, 1896.
68 specimens.
L. compressa Cress.
June 24, Sept. 15, 1895.
June 2–10, 1896.
7 specimens.
L. conjuncta Cress.
June 4, Sept. 15, 1894.
Aug. 1, Oct. 27, 1895.
12 specimens.
L. dentata Prov.
July 15, 1894.
Sept. 21. 1894.
2 specimens.
L. ductilis Say.
June 21, 1895.
2 specimens.
L. dubitata Cress.
Sept. 2–20, 1895.
May 16–20, 1896.
5 specimens.
L. flavicincta Davis.
June 29, 1895.
1 specimen.
L. flavirista Cress.
June 15, 1895.
June 18, July 21, 1896.
8 specimens.
L. fugitiva Say.
1 specimen.
L. fura Cress.
June 27, 1895.
1 specimen.
L. guignardi Prov.
July 18, 1895.
June 23, 1896.
2 specimens.
L. hostilis Cress.
June 19, Aug. 26, 1894.
2 specimens.
L. marginata Prov.
1 specimen.
L. obscura Cress.
L. oxylus Cress.
May 7, Oct. 16, 1895.
21 specimens.
L. pilosula Prov.
June 15, Aug. 22, 1895.
2 specimens.
L. plena Prov.
May 23, 1896.
1 specimen.
L. rivalis Cress.
1 specimen.
L. rufipes Prov.
1 specimen.
L. subrubida Cress.
Aug. 30, 1894.
May 29, 1896.
6 specimens.

(To be continued.)

Notes on the Larvae of Certain Lepidoptera.

By F. X. WILLIAMS, San Francisco, Cala.

Spinx sequoiæ Shasta County, Cala. Larva hatches from large pale green egg, oval and eliptically flattened, laid usually singly on the underside of leaf of *Cerasus sp.* (wild cherry). Full grown larva about two inches long, sea green in color, head triangular and greenish as in *Smerinthus*. Body very rough and granular; anal horn green, straight and rather short. The lateral oblique lines are scarlet and spots of the same color are scattered sparsely over the body, their number and distinctness different in different individuals. The larva much resembles a *Smerinthus* caterpillar and the pupa resembles the pupa of the latter, being stout reddish brown in color and having no protruding tongue case.

Larva and eggs of *P. Sphinx? perelegans* were found on *manzanita.*

Calosaturnia mendocino Behr. Eggs laid from one to about ten on leaf of *manzanita*; many eggs parasitized. Full grown larvæ of two colors, one a beautiful green, the other a rich reddish brown. The larva is armed with bristles which sting painfully. The cocoon is hidden cunningly. It is sometimes spun between leaves but more often at the base of the trunk of the *manzanita*, which is covered with the curling bark. The cocoon is spun closely compressed to the trunk and covered with the curling bark in imitation of its surroundings. The larva is rather difficult to rear.

Larvæ of *Papilio daunus* were observed feeding on the Oregon ash.

A very dark *Attacus* was reared from a caterpillar feeding on spruce (Shasta County). Larvæ were also taken on *manzanita* and willow.

I have taken what I believe to be the larva of *Hepialus sequoiolus* Behr. I took several in November feeding in the decumbent stems of yellow lupine and in the thicker roots. The larvæ resembles the Hepialid larvæ having large dorsal plates of different sizes on the first four segments.

Variation in Callimorpha.

By George Coverdale, Hart P. O., Vernon Parish, La.

I read with much interest the article in the January, 1903 number of the Entomological News, entitled "Variation in Haploa," by H. W. Merrick. After inspecting the plate I decided to send you a pen and ink sketch of some forms of a moth which I supposed must be a "*Callimorpha*," as in habits and structure it seemed to me closely to resemble the European species *Callimorpha dominula* and *C. hera* with which I used to be acquainted in the old country. This sketch was made long ago, in 1888, and I am sure they are all of the same species, being taken at one time and place. The European *Callimorpha*, as you probably know, are more gorgeous than this insect, being bright scarlet, yellow and black, but if this is not a *Callimorpha* it is very close kin. I don't know how I came to call it *C. suffusa*. I suppose I gave it that name myself as I have had to do with hundreds of American species, as I have very little American literature and no correspondents who seem to know anything. When I take a specimen, for instance, a *Eupethecia* or *Grapholitha*, *Lithocolletes* or *Nepticula*, I place it in that genus (European) where it seems best to belong, then give it a specific name of my own, label it and record it, and afterwards record it in my journal by the same name. I should be glad of any help you could give me in the identification of species.

After comparing your plate in the Entomolooical News with my sketch I am compelled to state that I do not consider *C. suffusa* to be the same species as *Haploa contigua* or *H. militaris*. The character of the markings is essentially different and they do not vary along the same lines. It is very interesting to note these wonderful differences and resemblances, and is a source of exquisite pleasure to the genuine student of nature. I should be glad if you could give me the name of my species or name it for me if it has not one.* I remember to have taken a few specimens of another species which I call *C. ochrea*. These species of *Callimorpha* are both extremely local, as are also the European species. When pinned they both exude a bright yellow fluid, and there are other points of resemblance which I could enumerate. If the enclosed sketch would, in your opinion, be of any interest to the readers of the News, you are at liberty to reproduce it or make any use you like of it.

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*Specimens of these *Callimorphas* were sent to Dr. Dyar who replied as follows: "The *Callimorpha* is *colona* var. *reversa* Stretch. *Suffusa* Smith, is a synonym thereof. *Colona* is a yellow form with the same marks. The white form is *fulvicosta* Clemens."

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., MAY, 1905.

When we see descriptions and dichotomies with indefinite statements of fact we feel some one has offended science and that the culprit has lost sight of the use to which his description or dichotomy is to be put. One needs only to contemplate a moment to realize how meaningless it is to say smaller and in the alternative larger; isn't this, to say the least, ambiguous? Why not give the size in millimeters and thus give the next person a chance. Antennæ slender, antennæ thick, is another case in point. Here again science would certainly be better served if the width of the antenna were compared with some other constant appendage of the same specimen or the width of certain joints of an antenna as compared to the length would be close to a positive statement.

When we come to describe punctures and punctuation there is more excuse for ambiguity in saying smaller and large or sparse and close, respectively. But here again we would urge comparison with something fixed. The spacing of the punctures could be indicated by giving the interstices in terms of individual puncture widths.

All portions of an insect and peculiarities of the several orders might be drawn upon for examples to demonstrate this one principle, *i. e.* the principle of general utility, which can only be served by the person who undertakes to convey an idea in print to some one else, by constantly repeating "How will this appear to the other person, especially the person handicapped by lack of material?"—H. L. V.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

PROF. H. A. MORGAN's present address is University of Tennessee, Knoxville, Tennesee.

EDITOR OF NEWS:—There have been found, stored away in the Smithsonian Institution, a number of copies of the Hayden Report of U. S. Geological Survey for 1871 and 1872. The entomological contents of these volumes are as follows:

1871.—Coleoptera by G. H. Horn, pp. 382–392.

Hemiptera of Western U. S., by P. R. Uhler, pp. 392–423 inc. (Many new species described).

Saltatorial Orthoptera, by C. Thomas, pp. 423–466 inc. (Many new species described).

Butterflies, by Edwards, pp. 466–467. (List collected in 1871, and one new species).

1872.—Coleoptera, by G. H. Horn, p. 717. (List and notes).

Orthoptera, by C. Thomas, p. 719–725. (Description of species).

Odonata from Yellowstone, by H. Hagen, pp. 727–729. (List and n. sp).

Description of New Species of *Mallophaga*, by A. S. Packard, Jr., pp. 735–737. (New species described).

Description of New Insects, by A. S. Packard, Jr., pp. 739–741. (Dipterous larva and Arachnids).

Insects Inhabiting Great Salt Lake, etc., by A. S. Packard, Jr., pp. 743–746. (General notes).

If any readers of ENTOMOLOGICAL NEWS, who are doing special work in these groups, will write to me, I will send the volume so long as they last.—L. O. HOWARD, Chief of Bureau of Entomology, Washington, D. C.

Samia gloveri Strecker.—A specimen (male) of this species emerged to-day after being in pupation over two winters. The full-fed larva was taken in the foothills near Fort Collins during the summer of 1903 by Prof. Gillette. Soon after being brought into the laboratory the larva spun a cocoon in the upper part of a glass jar, which was covered with a thin cloth, thus exposing the pupa to the very dry and warm conditions of the laboratory. In the summer of 1904 the cocoon was moistened with the hope that the adult would emerge, but without success. The cocoon was then split open and the pupa found to be alive. It remained in this condition until February, 1905, when it was placed outside of the window in freezing weather for two or three days. On being brought into the laboratory a little water was put in the bottom of the jar. On March 8th a beautiful moth emerged, perfect in every respect and which does not appear to have suffered from its long sleep.—S. ARTHUR JOHNSON, Fort Collins, Colo.

Doings of Societies.

Insect Names.

At the Seventeenth Annual Meeting of the Association of Economic Entomologists, held in Philadelphia on December 29–30, 1904, the Society, with the object of conducing to uniformity in the use of common names of insects, adopted a report of its Committee on Nomenclature, consisting of Prof. Herbert Osborn, of the University of Ohio, Columbus, Ohio, Chairman; Prof. F. M. Webster, of the University of Illinois; and Prof. C. P. Gillette, of the University of Colorado; recommending the publication of the accompanying list of common names of insects, these names being the ones current throughout a large part of the world and throughout the region of the species. They urged that every entomologist use these names and these only, for English names; that the Latin name be included but once in as inconspicuous a manner as possible; and that copies of this list be furnished to the leading agricultural papers of the country, and that the editors of such papers be requested to use these, and these only, in all articles referring to such species.

Only names were placed upon the list that were agreed to *unanimously*, a much larger list remaining under consideration for future action.

H. E. SUMMERS, *Secretary A. E. E.*

List of Names Recommended for Exclusive Use.

American cockroach,	*Periplaneta americana* L.
Angoumois grain-moth,	*Sitotroga cerealella* L.
apple-leaf skeletonizer,	*Canarsia hammondi* Riley.
apple-aphis,	*Aphis pomi* L.
army-worm,	*Heliophila unipuncta* Haw.
asparagus beetle,	*Crioceris asparagi* L.
bag-worm,	*Thyridopteryx ephemeræformis* Haworth.
bean-weevil,	*Bruchus obtectus* Say.
bedbug,	*Klinophilos lectularia* L.
boll-weevil,	*Anthonomus grandis* Boh.
boll-worm,	*Heliothis obscura* Fab.
brown-tail moth,	*Euproctis chrysorrhœa* L.
buffalo tree-hopper,	*Ceresa bubalus* Fab.
cabbage aphis,	*Aphis brassicæ* L.

carpet-beetle,	*Anthrenus scrophularius* L.
carpet-moth,	*Trichophaga tapetzella* L.
cattle-tick,	*Boophilus annulatus* Say.
cecropia-moth,	*Platysamia cecropia* L.
chinch-bug,	*Blissus leucopterus* Say.
clover-hay worm,	*Hypospygia costalis* Fab.
codling-moth,	*Carpocapsa pomonella* L.
Colorado potato-beetle,	*Leptinotarsa decemlineata* Say.
cotton-stainer,	*Dysdercus suturellus* H. Schf.
cottony maple-scale,	*Pulvinaria innumerabilis* Rathv.
cottony cushion-scale,	*Icerya purchasi* Mask.
fall canker-worm,	*Alsophila pometaria* Harr.
fall web-worm,	*Hyphantria cunea* Drury.
granary-weevil,	*Calandra granaria* L.
grape-phylloxera,	*Phylloxera vastatrix* Planch.
gypsy-moth,	*Porthetria dispar* L.
harlequin cabbage-bug,	*Murgantia histrionica* Hahn.
Hessian-fly,	*Cecidomyia destructor* Say.
honey-bee,	*Apis mellifera* L.
hop-aphis,	*Phorodon humuli* Schrank.
horn-fly,	*Hæmatobia serrata* R-D.
horse bot-fly,	*Gastrophilus equi* L.
house-fly,	*Musca domestica* L.
indian-meal moth,	*Plodia interpunctella* Hübn.
larder-beetle,	*Dermestes lardarius* L.
leopard-moth,	*Zeuzera pyrina* L.
Mediterranean flour moth,	*Ephestia kuehniella* Zell.
onion thrips,	*Thrips tabaci* Lind.
oyster-shell scale,	*Lepidosaphes ulmi* L.
peach-borer,	*Sanninoidea exitiosa* Say.
peach-scale,	*Eulecanium persicæ* Fabr.
pear-slug,	*Ericampoides liminica* Ratz.
pea-weevil,	*Bruchus pisorum* L.
plum-curculio,	*Conotrachelus nenuphar* Hbst.
plum-gouger,	*Anthonomus prunicida* Walsh.
rice-weevil,	*Calandra oryza* L.
red-legged locust,	*Melanoplus femur-rubrum*. Deg.
rose-chafer,	*Macrodactylus subspinosus* Fab.
San José scale,	*Aspidiotus perniciosus* Comst.
scurfy scale,	*Chionaspis furfura* Fh.
silkworm,	*Bombyx mori* L.
spring canker-worm,	*Paleacrita vernata* Peck.
squash-bug,	*Anasa tristis* Deg.
striped blister-beetle,	*Epicauta vittata* Fab.
tarnished plant-bug,	*Lygus pratensis* L.
tomato-worm,	*Phlegethontius sexta* Joh.

At the meeting of the Feldman Collecting Social held March 11, 1905, at the residence of Mr. H. W. Wenzel, 1523 South 13th Street, Philadelphia, eleven members were present and Mr. Carl Schaeffer, of Brooklyn, visitor.

Mr. Schaeffer spoke of his table of genera of the *Cassidini* and showed color drawings of *Coptocycla bicolor*, and spoke of the difficulty of separating the same.

Prof. John B. Smith spoke of the great attack of the maple scale *Pulvinaria innumerabilis* on the shade maples in the eastern part of New Jersey, and stated that a large proportion of the insects are dying off. There were an enormous number of young larvæ discovered last fall, but by shaking and hitting trees they drop off and gradually dry up; there was some parasitism discovered at the same time; at the present time it is too early to know just what the outcome will be. There was a soot fungus present in the same localities where scales were seen.

Mr. Wenzel spoke of the scarcity of insects last year which was discussed by the members. Prof. Smith remarked that New Jersey was practically exempt from *Heliothis armiger* last year and suggested that the heavy frosts were likely responsible for their extermination. Prof. Smith further stated that absence of parasites last year will very likely account for the many larvæ which have been turned up by the collectors during winter.

Mr. Wenzel exhibited a large number of specimens of *Rhagium lineatum*, collected on March 12th at Red Bank, Gloucester County, N. J.

Mr. Daecke spoke of progess in all orders, and particularly in Tabanidæ. He remarked that he had taken 20 species of *Chrysops* in New Jersey, 3 of which are new to list, and 1 or 2 new to science.

Mr. Laurent spoke of collecting *Heterachthes quadrimaculatus* from twigs of hickory.

Mr. Haimbach spoke about *Desmia funeralis* and variety *subdivisalis*, pointing out that, so far as he had observed, all *funeralis* specimens are males, and all *subdivisalis* specimens females, which necessarily will drop out name *subdivisalis*.

FRANK HAIMBACH, *Secretary*.

OBITUARY.

FRIEDRICH MORITZ BRAUER.

The two distinguished entomologists who took such large parts in the formation of our later classifications of insects, Packard and Brauer, have passed away almost together. In the April NEWS we gave a sketch and portrait of the former. To-day we give a brief account of the Austrian naturalist taken mainly from the Necrology published by his colleague in Vienna, Dr. Anton Handlirsch, in the Deutsche Entomologische Zeitschrift for 1905, Heft I.

Brauer was born in Vienna May 12, 1832 and died in the same city December 29, 1904. He studied medicine, but early began to publish on insects, first on Neuroptera, later on Diptera. His connection with the Natural History Museum in his native city began in 1861 and continued to his death. He became Privat-dozent at the University in 1872 and Professor in 1874.

His chief works were *Neuroptera Austriaca*, 1857, Reports on the Neuroptera of the *Novara* expedition 1863–66, *Verzeichniss der Neuropteren im Sinne Linne's* 1868, *Monographie der Œstriden* 1863, *Zweiflügler der Kaiserlichen Museums*, partly in collaboration with von Bergenstamm, seven parts, 1880–1894, and *Systematisch zoologische Studien*, 1885.

To Brauer naturalists are indebted for the division of the Diptera into Orthorrhapha and Cyclorrhapha, as well as for minor improvements in the arrangement of that order, for the splitting up of the Linnean Neuroptera and other ordinal changes, for the *Campodea* theory and for numerous observations on the life history and postembryonic development of many Diptera and Neuroptera. He was elected a corresponding member of the American Ent. Soc. October 28, 1897.

ALBERT A. WRIGHT.

Albert A. Wright, professor of geology and zoology at Oberlin College, at Oberlin, as the result of a paralytic stroke, aged 59 years. Professor Wright was a native of Oberlin and a graduate of Oberlin College. He obtained the degree of Ph. B. from the School of Mines of Columbia University in 1875.

The deaths of the following entomologists have also been announced: Ernst Brenske, student of the Melolonthidæ, in Potsdam, August 13, 1904; George Maximilian von Hopffgarten, Coleopterist, in Dresden, November 23, 1904; Prof. H. Landois, physiologist and entomologist, in Munster, January 29, 1905, and Dr. Henri Louis Frederic de Saussure, February 20, 1905, Geneva, Switzerland.

EXCHANGES.

Not Exceeding Three Lines Free to Subscribers.

☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Lepidoptera to exchange for specimens new to my collection. Chas. Krueger, 1162 N. Lincoln Street, Chicago, Ill.

Promethea Cocoons to exchange for Lepidoptera or other cocoons. D. M. Fuller, 221 Lancaster St., Albany, N. Y.

Wanted.—North American Bibionidæ for study. Will name and return material sent, for the sake of learning the distribution. W. A. Hooker, care of Dr. H. T. Fernald, Mass. Agl. College, Amherst, Mass.

Exchange.—B. C. Lepidoptera in exchange for high grade guitar, typewriter, 3 A F. P. kodak, 4 B alvista or 5x7 Seneca No. 9 camera or like. Send description and conditions. Theo. Bryant, Wellington, B. C. Can.

Wanted.—Lycænidæ from North America and Europe, and early stages especially. Complete data required. Californian Lepidoptera given in exchange.—Fordyce Grinnell, Jr., Palo Alto, California.

Wanted.—Riley's 3rd, 4th and 6th Missouri Reports. Will pay cash for same.—Wilmon Newell, Box 583, Shreveport, La.

Offers Wanted.—U. S. A. Coleoptera, Mantidæ, Phasmidæ and Orthoptera by Entomological student.—W. T. Page, 6 Rylett Crescent, Shepherds' Bush, London W., England

Lepidoptera.—For exchange perfect specimens of *Pamphila aaronii*, *Satyrus alope* var *maritima*, *Pamphila panoquin*, *P. otho*, *egeremet*, *Yponomeuta multipunctella*. Send offers to Frank Haimbach, 1309 Allegheny Avenue, Philadelphia, Penna.

I have 400 *Promethea* (300 *Cynthia*, 100 *Cecropia*) and a few *Polyphemus* cocoons to exchange for other common N. A. pupæ or *Lepidoptera* in papers.—John H. West, 5335 E. Letterly St., Philadelphia, Pa.

Wanted in quantities, for cash or exchange, perfect specimens of common species of Lepidoptera, Coleoptera, Hymenoptera, Diptera and Hemiptera.—The Kny-Scheerer Co., Department of Natural Science, 255 Fourth Ave., N. Y. City.

Coleoptera.—I desire to exchange for good N. A. beetles especially from the southern states.—H. F. Wickham, Iowa City, Iowa.

Wanted.—*Lycænas* and *Theclas* not in my collection, either for cash or good exchange. Send list.—H. H. Brehme, 583 18th Ave., Newark N J.

Wanted.—Uhler's Papers on Hemiptera. Will give cash in exchange or insects, or any other papers. Will also name aquatic Hemiptera for privilege of examination. Write before sending.—J. R. de la Torre Bueno, 25 Broad St., New York City.

Lepidoptera.—Cocoons of North American *Limacodidæ* wanted. Will give *luna* cocoons in exchange.—John A. Grossbeck, 25 Totowa Ave., Paterson, N J.

North American Lepidoptera wanted in exchange for others. Have hundreds of specimens to exchange.—Send list to Jos. H. Reading, 775 N. Rockwell St., Chicago.

I will make drawings in black and colors, in exchange for perfect Lepidoptera, not found in this locality —W. Wild, 426 Baynes Street, Buffalo, New York.

Coleoptera.—*Ptinus fur*, *P. brunneus* and *Lomechusa cava* to exchange for Cicindelidæ. G. R. Pilate, 43 Wrae St., Dayton, Ohio.

Will contract to collect any order or group of insects this season for private collections, museums, colleges or any public institution. Duplicates for sale of all orders from Colorado, Arizona and New Mexico.—Ernest J. Oslar, Alcott P. O., Denver, Colorado.

Eastern Mass. moths wanted in exchange for same; also perfect colored sketches of larvæ of same.—C. V. Blackburn, 101 Pine Street, Woburn, Mass.

Wanted.—Fertile ova of *Argynnis diana*.—Robert A. Kemp, Frederick, Md.

Wanted.—In all parts of North America correspondents who will collect *Cicindela* and *Chrysomela* for named Coleoptera and Lepidoptera of North, Central and South America, Europe and Australia.—Address Room 23, Zool. Building, University of Chicago, Chicago, Ill.

Psyche.—Copies of the February Number, 1904 (Vol. XI, No. 1), wanted. Cash or exchange given.—H. H. Newcomb, 43 Tremont Street, Boston, Mass.

Coleoptera.—I wish to buy North and Central American beetles.—Fred. C. Bowditch, 164 Rawson Road, Brookline, Mass.

Wanted in exchange for beautiful exotic and native butterflies, a live Japanese Nightingale or other brilliant colored birds.—Chas F. Timm, 1255 Greene Avenue, Brooklyn, N. Y.

Exchange—Perfect fertile ova of *C colleta*, *A. luna* and *E. imperialis*, which I would like to exchange for fertile ova of other species.—Alfred C. Sampson, Sharon, Mass.

Have a number of books and pamphlets on Lepidoptera, also a zither to exchange for books not in my library, or for moths, geometers or micros.—Wm H. Broadwell, 275 High Street, Newark, N. J.

Correspondence wanted in order to exchange the common Lepidoptera of Cape Cod, for those from elsewhere.—Alfred C. Redfield, Barnstable, Mass.

Wanted.—Riley's 2d, 5th and 9th Missouri Reports. Will pay cash for same.—H. H. Newcomb, 43 Tremont Street, Boston Mass.

Exchange.—For a compound microscope, specifications, rack and pinion and fine adjustment, draw tube, one inch eye-piece, one inch and one-six inch objectives, divisible, inclination joint in case, with lock. Correspondence desired.—C. E. Montgomery, 10 Cabot Street, Portsmouth, N. H.

For Exchange.—Lepidoptera belonging to DeKalb County, Georgia, for specimens not found in that locality.—Robert Windsor Smith, Kirkwood, Georgia

Proctotrypoidea Wanted.—Will identify specimens for privilege of study, or will take them in exchange for identified specimens of other groups.—C. T. Brues, Public Museum, Milwaukee, Wis.

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